Forest Insect & Disease Management

Pilot Control Project

S-3-75

March, 1975

PILOT CONTROL PROJECT WITH DIMETHOATE AND MALATHION TO ELIMINATE RHYACIONIA ADANA, MICHIGAN 1974

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INTRODUCTION

In September 1973, the Michigan Department of Plant Industry Division, notified the U.S. Forest Service, Toumey Nursery, Watersmeet, Michigan, that certification for shipment of some 3-0 red pine stock was being withheld because of an insect infestation found during a late summer inspection. The pest was later identified as a tip moth, Rhyacionia adana (Heinrich).

Daily applications of pyrethrin during moth flight in May 1974 failed to eliminate oviposition; further efforts were needed to eliminate the R. adana population. Insecticides applied to the larval stage appeared to be the logical solution.

OBJECTIVE

The purpose of this pilot control project was to eliminate the damage-causing larval population of R. adana with applications of dimethoate or malathion.

METHOD

Insecticides: Dimethoate 23.4 percent Emulsifiable Concentrate was mixed at the rate of 3.0 pts per 100 gallons of water. Malathion 57 percent EC was mixed at the rate of 1.5 pts per 100 gallons of water. These mixtures gave one pound of active insecticide per 100 gallons of spray formulation. The treatments were applied with a tractor-mounted sprayer equipped with three flat fan nozzles over each bed. The application rate was 54 gallons (0.54 lb active ingredient) per acre at 150 psi pump pressure.

Treatment: results of the egg survey, evaluating the adult moth treatments, showed that Unit 10, Block 4, Section 3 had the highest egg counts. It was selected for the pilot treatments and the checks. Each insecticide was applied to three replicates of each of the three treatments.

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(1) Early - at estimated time of egg hatch.
(2) Late - seven days after the early treatment.
(3) Double - at egg hatch and seven days later.

The early treatment and first of the double treatments were applied May 31. The late treatment and second of the double treatment were made on June 5.

Evaluation: twenty 1 sq ft plots were randomly selected from each of the six treatments and the untreated check area. The number of damaged and undamaged trees were recorded as evidence of larvae surviving the treatments.

RESULTS AND CONCLUSIONS

Neither dimethoate nor malathion treatments eliminated the larval population as evidenced by damaged trees. The double application of malathion resulted in the least number of damaged trees, four of 605 sampled (0.7 percent). None of the other treatments gave less than 1 percent damaged trees. Although 33 of the 608 check trees (5.4 percent) were damaged, the total infestation was too low to determine conclusive results of effectiveness. No application for registration will be initiated.

Insecticide treatments to control R. adana damage to red pine - Toumey Nursery, Michigan, 1975:

Treatment	Dimethoate			Malathion		
	Number Examined	Number Damaged	Percent Damaged	Number Examined	Number Damaged	Percent Damaged
Early	567	21	3.7	529	9	1.7
Late	587	12	2.0	636	11	1.7
Double	606	6	1.0	605	4	0.7
Checks	608	33	5.4			

PESTICIDE PRECAUTIONARY STATEMENT

This publication reports the evaluation of pesticides. It does not contain recommendations for their use, nor does it imply that the uses discussed here have been registered. All uses of pesticides must be registered by appropriate State and/or Federal agencies before they can be recommended.

CAUTION: Pesticides can be injurious to humans, domestic animals, desirable plants, and fish or other wildlife--if they are not handled or applied properly. Use all pesticides selectively and carefully. Follow recommended practices for the disposal of surplus pesticides and pesticide containers.

PROTECT
Use Pesticides Safely
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